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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,771	09/19/2005	Osamu Funahashi	MAT-8742US	7878
53473	7590	03/17/2010		
RATNERPRESTIA P.O. BOX 980 VALLEY FORGE, PA 19482			EXAMINER ELBIN, JESSE A	
			ART UNIT 2614	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/549,771

Applicant(s)

FUNAHASHI, OSAMU

Examiner

JESSE A. ELBIN

Art Unit

2614

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Amendment

1. The amendment filed January 6, 2010 has been entered as a result of the Request for Continued Examination filed February 1, 2010.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-4, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi (US PGPub 2003/0185415) (already of record) in view of White (US Patent 3,862,376 ('376)).

Regarding claim 1, Funahashi teaches a loudspeaker (abstract) comprising: a magnetic circuit (e.g. '415 Figs. 7-9 #9) having an annular magnetic gap ('415 Figs. 7-9 #14); a frame ('415 Figs. 7-9 #19) coupled to the magnetic circuit (e.g. '415 Figs. 7-9); a voice coil ('415 Figs. 7-9 #16) movably fitted into the magnetic gap ("voice coil member 15 has movable coil 16 in magnetic gap 14 of magnetic circuit 9"; '415 [0042] lines 1-2); and a diaphragm ('415 Figs. 7, 9 #17) coupled to the frame (e.g. '415 Figs. 7-9) at its

periphery via a first edge ('415 Figs. 7-9 #18), wherein a suspension holder (e.g. '415 Figs. 7-9 #25, 27) extending downward from a middle portion between an inner periphery and an outer periphery on a rear surface of the diaphragm ('415 Figs. 7-9) is [coupled to] the diaphragm ('415 Figs. 7-9); and the periphery of the suspension holder is coupled to the frame via a second edge ('415 Fig. 7-9 #21) that is symmetric and similar to the first edge ("first edge 18 and second edge 21 are substantially symmetrical analog each other..."; '415 [0045] lines 3-5).

Funahashi does not explicitly teach the suspension holder being "integrally formed with" the diaphragm.

In the same field of endeavor, White teaches the suspension holder being integrally formed with the diaphragm ("FIG. 13 is a...mold for simultaneous injection of hard-curing plastic for the cone body and soft-curing plastic for the surround and spider"; '376 col. 3 lines 33-36) for the benefit of producing "a cone body having integral flexible mountings" ('376 col. 3 lines 33-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to integrally mold the diaphragm and suspension holder as taught by White for the benefit of producing a cone body having integral flexible mountings.

Regarding claim 2, Funahashi and White remain as applied above.

Funahashi further teaches the diaphragm (#17) is formed of resin ("Diaphragm 17 is made of material such as pulp or resin"; '415 [0043] lines 3-4).

Regarding claim 3, Funahashi and White remain as applied above.

Funahashi further teaches the first edge (e.g. '415 Fig. 12 #29) and the second edge ('415 Fig. 12 #30) are formed in a semicircular roll shape ('415 Figs. 1, 4-17, and 20-21), respectively, and the first edge is protruded toward a magnetic circuit ("In FIG. 12, first edge 29 is protruded toward magnetic circuit 9"; '415 [0060] lines 7-8) and the second edge is protruded toward the diaphragm ("and second edge 30 is protruded toward diaphragm 17"; '415 [0060] lines 8-9).

Regarding claim 4, Funahashi and White remain as applied above.

Funahashi further teaches the first edge (e.g. '415 Fig. 11 #18) and the second edge (e.g. '415 Fig. 11 #21) are formed in a semicircular roll shape ('415 Figs. 1, 4-17, and 20-21), respectively, and the first edge is protruded toward an opposite side of the magnetic circuit ("In FIG. 11, first edge 18 is protruded toward an opposite side of magnetic circuit 9"; '415 [0058] lines 7-8) and the second edge is protruded toward the magnetic circuit ("Second edge 21 is protruded toward magnetic circuit 9"; '415 [0058] lines 8-9).

Regarding claim 6, Funahashi teaches a loudspeaker (abstract) comprising: a magnetic circuit (e.g. '415 Figs. 7-9 #9) having an annular magnetic gap ('415 Figs. 7-9 #14); a frame ('415 Figs. 7-9 #19) coupled to the magnetic circuit (e.g. '415 Figs. 7-9); a voice coil ('415 Figs. 7-9 #16) movably fitted into the magnetic gap ("voice coil member 15 has movable coil 16 in magnetic gap 14 of magnetic circuit 9"; '415 [0042] lines 1-2);

and a diaphragm ('415 Figs. 7, 9 #17), wherein a suspension holder (e.g. '415 Figs. 7-9 #25, 27) extending downward from a middle portion between an inner periphery and an outer periphery on a rear surface of the diaphragm ('415 Figs. 7-9) is integrated with the diaphragm ('415 Figs. 7-9); and the periphery of the suspension holder is coupled to the via a second edge ('415 Fig. 7-9 #21) that is symmetric and similar to the first edge ("first edge 18 and second edge 21 are substantially symmetrical analog each other..."; '415 [0045] lines 3-5), the method comprising the steps of: molding the diaphragm and the suspension holder with resin ("Diaphragm 17 is made of...resin"; '415 [0043] lines 3-4 and "Suspension holder 20 is made of...resin"; '415 [0044] lines 9-10); coupling the molded diaphragm to the frame at its periphery via a first edge ("Frame 19...is linked with an outer peripheral part of diaphragm 17 via first edge 18"; '415 [0044] lines 1-2); and coupling the molded suspension holder to the frame via a second edge ("An outer peripheral part of suspension holder 20 is coupled with frame 19 via second edge 21"; '415 [0044] lines 11-12).

Funahashi does not explicitly teach "integrally molding the diaphragm and the suspension holder".

In the same field of endeavor, White teaches integrally molding the diaphragm and the suspension holder ("FIG. 13 is a...mold for simultaneous injection of hard-curing plastic for the cone body and soft-curing plastic for the surround and spider"; '376 col. 3 lines 33-36) for the benefit of producing "a cone body having integral flexible mountings" ('376 col. 3 lines 33-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to integrally mold the diaphragm and suspension holder as taught by White for the benefit of producing a cone body having integral flexible mountings.

Regarding claim 8, Funahashi and White remain as applied above.

Funahashi further teaches the suspension holder and the diaphragm being formed of a resin ("Diaphragm 17 is made of...resin"; '415 [0043] lines 3-4 and "Suspension holder 20 is made of...resin"; '415 [0044] lines 9-10).

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al. (US PGPub 2003/0185415 A1 ('415)) (already of record) in view of White (US Patent 3,862,376 ('376)) in view of Sato et al. (US Patent 5,793,002 ('002)) (already of record).

Regarding claim 9, Funahashi, and White remain as applied above.

Neither Funahashi nor White explicitly teaches the resin being a polypropylene resin.

In the same field of endeavor, Sato teaches use of "an amount of polypropylene resin...into a metallic mold" ('002 col. 3 lines 36-37) for the benefit of creating a loudspeaker component with a specific stiffness and thickness.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the resin taught by the combination of Funahashi, and White with

the polypropylene resin taught by Sato for the benefit of creating a loudspeaker component with a specific stiffness and thickness.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al. (US PGPub 2003/0185415 A1 ('415)) (already of record) in view of Proni (US Patent 5,734,132 ('132)) (already of record).

Regarding claim 5, Funahashi teaches a loudspeaker (abstract) comprising: a magnetic circuit (e.g. '415 Figs. 7-9 #9) having an annular magnetic gap ('415 Figs. 7-9 #14); a frame ('415 Figs. 7-9 #19) coupled to the magnetic circuit (e.g. '415 Figs. 7-9); a voice coil ('415 Figs. 7-9 #16) movably fitted into the magnetic gap ("voice coil member 15 has movable coil 16 in magnetic gap 14 of magnetic circuit 9"; '415 [0042] lines 1-2); and a diaphragm ('415 Figs. 7, 9 #17) coupled to the frame (e.g. '415 Figs. 7-9) at its periphery via a first edge ('415 Figs. 7-9 #18), wherein a suspension holder (e.g. '415 Figs. 7-9 #25, 27) extending downward from a middle portion between an inner periphery and an outer periphery on a rear surface of the diaphragm ('415 Figs. 7-9) is integrated with the diaphragm ('415 Figs. 7-9); and the periphery of the suspension holder is coupled to the frame via a second edge ('415 Fig. 7-9 #21) that is symmetric and similar to the first edge ("first edge 18 and second edge 21 are substantially symmetrical analog each other..."; '415 [0045] lines 3-5).

Funahashi does not explicitly teach "the diaphragm including an engaging portion integrally formed with the diaphragm"; the suspension holder being integrated with the diaphragm "via a coupling portion which engages the engaging portion".

In the same field of endeavor, Proni teaches the diaphragm (*corresponding to* '132 Fig. 3 #12) including an engaging portion ("elbow"; '132 Fig. 3 #15) integrally formed with the diaphragm ("the diaphragm 12 preferably defines a cylindrical elbow 15 by making a substantially downward vertical bend from its usual obtuse plane"; '132 Fig. 3); the suspension holder (*corresponding to* '132 Fig. 3 #30) being integrated with the diaphragm via a coupling portion ('132 Fig. 3 #40) which engages the engaging portion ('132 Fig. 3).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. **Claims 1-9** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of US Patent 7,443,996 in view of the prior art of record as applied in the art rejections above. While the two sets of claims are not identical, their differences were not found to patentably distinguish the two sets of claims in view of the prior art of record.

9. **Claims 1-9** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of US Patent 7,532,736 in view of the prior art of record as applied in the art rejections above. While

the two sets of claims are not identical, their differences were not found to patentably distinguish the two sets of claims in view of the prior art of record.

10. **Claims 1-9** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of US Patent 7,542,583 in view of the prior art of record as applied in the art rejections above. While the two sets of claims are not identical, their differences were not found to patentably distinguish the two sets of claims in view of the prior art of record.

11. **Claims 1-9** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of US Patent 7,574,013 in view of the prior art of record as applied in the art rejections above. While the two sets of claims are not identical, their differences were not found to patentably distinguish the two sets of claims in view of the prior art of record.

12. **Claims 1-9** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/583044 in view of the prior art of record as applied in the art rejections above. While the two sets of claims are not identical, their differences were not found to patentably distinguish the two sets of claims in view of the prior art of record.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

13. Applicant's arguments with respect to claims 1-6, 8, and 9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Schneider (US Patent 3,612,783) teaches a mold capable of forming the diaphragm, suspension, voice coil, and surrounds simultaneously.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE A. ELBIN whose telephone number is (571)270-3710. The examiner can normally be reached on Monday through Friday, 9:00am to 6:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. E./
Examiner, Art Unit 2614
/CURTIS KUNTZ/
Supervisory Patent Examiner, Art Unit 2614